



CASE STUDY



ROYAL UNITED HOSPITALS BATH

Carrier R-32 Chillers Selected for Major Cooling Upgrade at Royal United Hospitals Bath

Project description

Royal United Hospitals Bath has completed an upgrade of the hospital's air conditioning system with the installation of two Carrier AquaSnap® 30RBP air-cooled chillers with Greenspeed® Intelligence.

The inverter-driven, variable-speed chillers provide low noise cooling for wards and operating theatres. The high-efficiency chillers operate on lower global warming potential (GWP) refrigerant R-32, which is up to 10% more efficient than R-410A, the refrigerant it replaces, and has a GWP 68% lower.

Mounted on a new steel roof-top platform, the chillers replace two end-of-life split-system chillers by other manufacturers. Due to their compact, fully packaged design, the Carrier units have significantly lower servicing requirements and lower maintenance costs. The high efficiency chillers align with Carrier's 2030 Environmental, Social and Governance goals to reduce customer's carbon footprint by more than 1 gigaton.

Background

The chillers have a very high seasonal energy efficiency rating (SEER) of 5.18 thanks to their combination of variable-speed electronically commutated condenser fans, high-performance Novation® heat exchangers and compressors optimised for operation with R-32.

To give the resilience required in this critical hospital application, the N+N system design ensures a second unit is available to take over full cooling duties in the unlikely event of a failure.

James Allard, Director of Brunel Integrated Services, consultant on the project, said: "Key requirements for the project were excellent efficiency, reliability, resilience, low sound levels and reduced environmental impact, and the Carrier chillers and system design deliver this. Carrier's Russ Tyrell provided excellent support throughout the project."

Challenges and Solutions

James Allard said: "There was an issue with the hospital's electrical supply, which was limited and couldn't be upgraded in time for the start-up of the new chillers. Carrier responded quickly and programmed a load limit into the chiller control system to ensure they would not draw more than the maximum allowed, protecting the hospital's electrical system while ensuring cooling needs were fully met."

This enabled the new chillers to be commissioned and put into service while work continued to upgrade the electrical supply. The chillers were also equipped with soft-start electronics, providing a further safeguard for the peak electrical load.



Options included enhanced acoustic attenuation to further reduce noise, and Enviroshield® condenser coil protection, with comes with a three-year warranty.

James Allard: "Although the NHS was Carrier's direct customer on the project, Carrier provided excellent support to the installer, Intoheat Ltd, and worked closely with them to support the project to completion."

As a result of the successful project, Brunel Integrated Services recommended a similar Carrier solution for a cooling project at another hospital in the West of England.



Royal United Hospitals Bath

Bath, United Kingdom

2022

KEY BENEFITS

- Lower GWP solution
- Improved energy efficiency
- Easier to service
- Lower energy and maintenance costs
- Low noise
- Extended warranty on coils

TECHNOLOGIES

- 2 x Carrier AquaSnap® 30RBP air-cooled chillers with Greenspeed® Intelligence.

